DOCUMENT RESUME

ED 289 980 CE 049 243

TITLE	CATV Aerial Construction Course. Model Vocational Education Project for Special Needs Incarcerated Youth.
INSTITUTION	Elgin Community Coll., Ill.
SPONS AGENCY	Illinois State Board of Education, Springfield. Dept. of Adult, Vocational and Technical Education.
PUB DATE	Jun 87
NOTE	72p.
PUB TYPE	Guides - Classroom Use - Guides (For Teachers) (052)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	Behavioral Objectives; *Cable Television; Check Lists; *Correctional Education; Curriculum Guides; *Electricity; Job Skills; Postsecondary Education; *Safety; Secondary Education; Service Occupations; Student Evaluation; *Trade and Industrial Education; Two Year Colleges

ABSTRACT

This curriculum guide provides materials for a course to enable a student to meet the entry-level requirements of the cable industry as an aerial construction crew member. It is appropriate for a juvenile correctional facility, high school, or junior college. The course is intended to be completed in a minimum of 150 hours, including time in both the classroom and aerial practice field. It includes an introduction to the history of cable television (CATV), an overview of the entire process of cabling a city, a discussion of safe construction of the aerial portion of the plant, job survival skills, and job safety. Fourteen units cover 28 objectives. The 14 units are introduction, safety, electricity, preconstruction phase, mapping, pole framing, climbing, ladders, drilling, stranding, cabling, splicing, survival skills, and inventory. For each objective these components are provided: task, performance objective, setting, performance guide, resource list, and checklist for student evaluation. Appendixes include primary and secondary vocabulary lists, a curriculum checklist, and a listing of sources of materials. (YLB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED289980

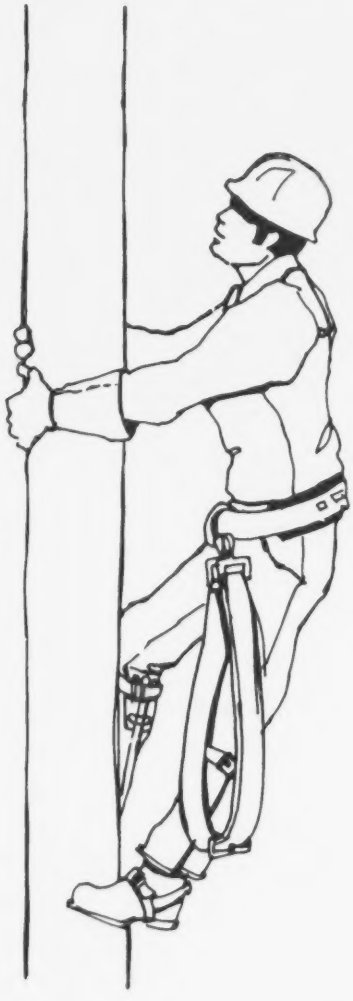
MODEL
VOCATIONAL
EDUCATION
PROJECT for
SPECIAL NEEDS
INCARCERATED
YOUTH

Illinois
State Board of
Education

Adult,
Vocational and
Technical Education

CATV

AERIAL CONSTRUCTION COURSE



U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

D Gill

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CE049243

BEST COPY AVAILABLE

MODEL
VOCATIONAL
EDUCATION
PROJECT FOR
SPECIAL NEEDS
INCARCERATED
YOUTH

Illinois
State Board of
Education

Walter W. Naumer, Jr.
Chairman

Ted Sanders
State Superintendent
of Education

Adult,
Vocational and
Technical Education

Research and
Development Section

June, 1987

27-RG-669

Project Staff

Project Director
Richard A. Cervantes

Project Instructor
Bernard P. Knepper

Constultants
Karen S. Fitzgerald
Karen L. Haas

Community
Education
Division

Elgin
Community
College

An Equal Opportunity/Affirmative Action Employer

I. Description

This course is designed to meet the entry level requirements of the cable industry as an aerial construction crew member. This includes an introduction of the history of CATV, an overview of the entire process of cabling a city, how to safely construct the aerial portion of the plant (pole climbing, stranding, cabling and splicing), job survival skills and job safety.

II. Population

This course was initially designed with a juvenile correctional facility in mind. An atmosphere of small group instruction was used. It is felt however, that this course would be appropriate for high school and junior college students that would be applying for jobs within two months of course completion.

III. Justification

The cable industry is rapidly growing. With this comes an increased demand for aerial construction crew members that are willing to be mobile. This course allows students to be competantly trained and placed into the job force in a relatively short time span. It also meets the needs of the population by somewhat limiting the level of academic skills, especially reading and math, necessary for course completion.

IV. Course length

This course was intended to be completed in a minimum of 150 hours, including time in both the classroom and aerial practice field.

V. Instructor

It is assumed that the instructor will have a working knowledge of the cable industry.

VI. Setting

An aerial practice field was used in conjunction with a classroom setting. This consisted of six five foot utility poles that were set in a concrete base. This enabled the poles to be moved into the classroom for demonstration use. The five foot poles provided an opportunity to practice framing at a low level. Eight 35 foot utility poles were

also used. The eight poles were layed out in such a manner as to facilitate practice with a variety of framing set-ups. Skills practiced at ground level are preformed within the first three feet of the pole. Working height is considered to be eighteen feet off the ground.

VII. Equipment

Personal Equipment

Body belt with safety strap, tool pouch, utility pouch, glove bag, and hand line clip
Climbers - adjustable with guards
Hard hat
Gloves
Boots
Rain gear - optional

Personal Tools

Gaff sharpening kit
Electrician's pliers
Line wrench
Nut driver set
Line knife
Screwdriver
Wooden Ruler
Hand line

Optional Personal Tools

Lineman's tool bag
Adjustable wrench
Insulated handle pump plier
Hammer
Flashlight

Stranding Tools

Bolt & wire cutters
Bit & brace
Lay-up stick with attachments
Pole sling
Chain hoist
Messenger grips (pork-chop)
Traveling ground
Pulling eye
Sledge hammer
Insulated measuring stick
Pulleys
Digging tools
Cable reel trailer with brake
Dynamometer

Cabling Tools
Aerial cable chute
45° & 90° corner blocks with pole attachments
Cable puller
Cable rollers (blocks)
Multiple cable blocks
Rotating pulling eye
Lashing machine
Catch off clamp
Forming board or unibender
Cable cutter

Splicing Tools
Tubing cutter
Cable prep tool
Coring tool
Center conductor cleaner
Propane torch
Volt Ohm Meter (VOM)

Hardware
Straight clamp
Curved clamp
Assorted lengths of machine bolts & thimbleye bolts
Nuts
Flat washers
Threaded or unthreaded eye nuts
Crossover clamp
Down guy attachment (assorted)
Auxiliary anchor eye
Double dead end
Preformed dead end
Strand
Cable
Bonding clamp
Cable spacer
Lashing wire clamp (bug nut)
Lashing wire
#6 AWG copper wire
Anchors
Down guy guards
Ground wire conduit
Staples

VIII. Evaluation

Two forms of evaluation have been included with this curriculum. Every objective has its own checklist of performance guides. Each student would have one checklist per objective. The second evaluation guide lists all

objectives on one sheet. Reference to individual checklists may be necessary as skill descriptions are brief. The students are marked satisfactory or unsatisfactory for each skill.

IX. Prerequisits for students

1. No fear of heights
2. Good physical condition
3. Driver's license beneficial for employment
4. Eligible for employment within two months of course completion

X. Overview

This course has been broken down into fourteen units comprised of twenty eight objectives. The following summary lists these units and objectives.

Introduction Unit
1. Basic history
2. Related vocabulary
3. Process from obtaining franchise to customer

Safety Unit
4. Safety rules
5. First aid

Electrical Unit
6. Basic electricity

Preconstruction Phase Unit
7. Procedures before aerial construction

Mapping Unit
8. Read, interpret and draw maps

Pole Framing Unit
9. Identification
10. Practical installation

Climbing Unit
11. Identification of equipment
12. Equipment use and care
13. Preclimbing skills
14. Ascending
15. Strapping on

16. Working position
17. Maneuvering
18. Strapping off
19. Descending

Ladders Unit
20. Kinds of ladders and use

Drilling Unit
21. Types of drills and drilling techniques

Stranding Unit
22. Physical properties
23. Stranding techniques
24. Anchoring

Cabling Unit
25. Strand/cable method

Splicing Unit
26. Splicing procedures

Survival Skills Unit
27. Skills for employment

Inventory Unit
28. Inventory supplies

UNIT: Introduction

OBJECTIVE: 1

TASK: Understand the basic history of the cable industry

PERFORMANCE OBJECTIVE: The student will outline cable development from origin to future uses including the involvement of FCC.

SETTING: Classroom

PERFORMANCE GUIDE:

1. Explain the origination of cable
2. Demonstrate understanding for desirability of imported signals
3. Explain why the FCC became involved with cable
4. Identify what can and can't be done by cable in accordance with the FCC rules
5. Describe the process of getting satellite signals
6. Demonstrate understanding how cable uses local origination programming
7. Show knowledge of the future uses of cable ("sky-blue")

RESOURCES:

1. Cable Primer
   National Cable Television Association

2. Cable: Special For You (Video)
   National Cable Television Association

3. Basic Cable 101 (Slides)
   National Cable Television Association

4. Information Kit
   National Cable Television Association

5. Updated FCC Rules
   National Cable Television Association

Student's Name _____

UNIT: Introduction

OBJECTIVE: 1

CHECKLIST: Understand the basic history of the cable industry

ACTIVITY:

*S	U		
____	____	1.	Explain the origination of cable
____	____	2.	Demonstrate understanding for desirability of imported signals.
____	____	3.	Explain why the FCC became involved with cable
____	____	4.	Identify what can and can't be done by cable in accordance with the FCC rules.
____	____	5.	Describe the process of getting satellite signals.
____	____	6.	Demonstrate understanding how cable uses local origination programming.
____	____	7.	Show knowledge of the future uses of cable ("sky-blue").

*S - Satisfactory
U - Unsatisfactory

Evaluated by _____

Date _____

UNIT: Introduction

OBJECTIVE: 2

TASK: Become familiar with related vocabulary

PERFORMANCE OBJECTIVE: The student will incorporate cable related vocabulary into their expressive and receptive communication skills.

SETTING: Classroom

PERFORMANCE GUIDE:

1. Define terms listed on primary vocabulary list (See Appendix A)
2. Properly use primary vocabulary words during expressive communication (See Appendix A)
3. Recognize secondary vocabulary words as terms related to cable industry (See Appendix B)

RESOURCES:

Student's Name _____

UNIT: Introduction

OBJECTIVE: 2

CHECKLIST: Become familiar with related vocabulary

ACTIVITY:

*S	U	
____	____	1. Define terms listed on primary vocabulary list (See Appendix A)
____	____	2. Properly use primary vocabulary words during expressive communication. (See Appendix A)
____	____	3. Recognize secondary vocabulary words as terms related to cable industry. (See Appendix B)

* S - Satisfactory
  U - Unsatisfactory

Evaluated by _____

Date _____

UNIT: Introduction

OBJECTIVE: 3

TASK: Understand the process of obtaining a franchise from request for proposal to customer installation

PERFORMANCE OBJECTIVE: The student will outline procedures starting with the acquisition process, through the involvement of corporation and local cable construction companies.

SETTING: Classroom

PERFORMANCE GUIDE:

1. Demonstrate knowledge of bidding process; city's request, collection, selection of bids
2. Outline procedure following the awarding of the franchise
   A) Headend sight survey
   B) 3 party walk
   C) Make-ready
3. Describe the difference between aerial and underground cable construction
4. Show understanding of when the activation and installation phases take place

RESOURCES:

Student's Name_____

UNIT: Introduction

OBJECTIVE: 3

CHECKLIST: Understand the process of obtaining a franchise from request for proposal to customer installation

ACTIVITY:

*S	U		
____	____	1.	Demonstrate knowledge of bidding process; city's request, collection, selection of bids
____	____	2.	Outline procedure following the awarding of the franchise
____	____	3.	Describe the difference between aerial and underground cable construction
____	____	4.	Show understanding of when the activation and installation phases take place

* S - Satisfactory
  U - Unsatisfactory

Evaluated by_____

Date_____

UNIT: Safety

PERFORMANCE OBJECTIVE: 4

TASK: Learn the safety rules

PERFORMANCE OBJECTIVE: The student will demonstrate knowledge of general safety rules and rules specific to aerial construction.

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. State general safety rules as set by instructor
2. Explain what to do in case of emergency
3. Give examples of safety rules concerning personal equipment
   - A) Have and properly wear six pieces of equipment at all times (hard hat, gloves, body belt, safety strap, climbers, long sleeves)
   - B) Safety shoes worn at all times while climbing
   - C) Check own equipment each day
4. Give examples of rules concerning gaffs
   - A) No walking with gaffs except around poles
   - B) Take care in walking while wearing gaffs
5. Give examples of safety rules concerning construction equipment
   - A) Only use tools for their designed purposes
   - B) Ladders are to be used only under direct supervision of the instructor
6. Give examples of rules concerning climbing
   - A) Only one student per pole
   - B) Climb only as high as you have been checked off
   - C) No climbing with a bit and brace

RESOURCES:

1. Protective Clothing and Equipment (Slides), National Cable Television Association/Sensoria Motivation Systems
2. NCTA OSHA Safety Program (Slides), National Cable Television Association/Sensoria Motivation Systems
3. CATV Health and Safety Compendium, Society of Cable Television Engineers, Inc.

Student's Name_____

UNIT: Safety

OBJECTIVE: 4

CHECKLIST: Learn the safety rules

ACTIVITY:

*S	U		
____	____	1.	State general safety rules as set by instructor
____	____	2.	Explain what to do in case of emergency
____	____	3.	Give examples of safety rules concerning personal equipment
____	____	4.	Give examples of rules concerning gaffs
____	____	5.	Give examples of safety rules concerning construction equipment
____	____	6.	Give examples of rules concerning climbing

* S - Satisfactory
  U - Unsatisfactory

Evaluated by_____

Date_____

UNIT: Safety

OBJECTIVE: 5

TASK: Learn first aid

PERFORMANCE OBJECTIVE: The student will describe first aid procedures to be used in emergencies.

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. Understand and prioritize the four emergency cases
2. Outline the procedures for artificial respiration
   - A) Check for breathing
   - B) Open airway - tilt head
   - C) Check for breathing and start artificial respiration
   - D) Seek medical assistance
3. Outline the procedures followed when dealing with severe bleeding
   - A) Direct pressure
   - B) Elevation
   - C) Pressure points
   - D) Seek medical assistance
4. Outline the procedures followed in the case of poisoning
   - A) Dilute
   - B) Seek medical assistance
5. Outline the procedures followed when dealing with shock
   - A) Maintain body temperature
   - B) Give small amounts of fluid if victim is conscious
   - C) Seek medical assistance

RESOURCES:

Student's Name _____

UNIT: Safety

OBJECTIVE: 5

CHECKLIST: Learn first aid

ACTIVITY:

*S	U		
____	____	1.	Understand and prioritize the four emergency cases
		Breathing	
____	____	2.	Check for breathing
____	____	3.	Tilt head to open airway
____	____	4.	Explain method of artificial respiration
____	____	5.	State that medical assistance would be sought
		Bleeding	
____	____	6.	Apply direct pressure to wound
____	____	7.	Elevate wound area
____	____	8.	Apply pressure to pressure point
____	____	9.	State that medical assistance would be sought
		Poison	
____	____	10.	Explain types of poisons and corresponding methods of diluting
____	____	11.	State that medical assistance would be sought
		Shock	
____	____	12.	Maintain body temperature
____	____	13.	State that victim would receive small amounts of fluid if conscious
____	____	14.	State that medical assistance would be sought

* S - Satisfactory
U - Unsatisfactory

Evaluated by _____

Date _____

UNIT: Electrical

OBJECTIVE: 6

TASK: Understand the basic concepts of electricity

PERFORMANCE OBJECTIVE: The student will demonstrate knowledge of the basic concepts of electricity and how they relate to the field of cable television.

SETTING: Classroom

PERFORMANCE GUIDE:

1. Show knowledge of the forms of energy (kinetic, potential)
2. Describe atomic structure with regard to electrons, protons, and neutrons
3. Demonstrate understanding of electrical potential (volts), current (amps), and resistance (ohms)
4. Identify and describe open and closed circuits
5. Give examples of sources of potential
6. Discuss causes of electrical shock and effects on the human body
   A) External body burns
   B) Internal damage
   C) Possible heart stoppage

RESOURCES:

1. Safety Awareness Around Electrical Conductors (Video)
   T-1016 Society of Cable Television Engineers, Inc.

2. Electrical Safety - The Shocking Truth (Slides)
   National Cable Television Association

3. Basic Electronic Fundamentals (Video)
   T-1030 Society of Cable Television Engineers

Student's Name_____

UNIT: Electrical

OBJECTIVE: 6

CHECKLIST: Understand the basic concepts of electricity

ACTIVITY:

*S	U		
____	____	1.	Show knowledge of the forms of energy (kinetic, potential)
____	____	2.	Describe atomic structure with regard to electrons, protons, and neutrons
____	____	3.	Demonstrate understanding of electrical potential (volts), current (amps), and resistance (ohms)
____	____	4.	Identify and describe open and closed circuits
____	____	5.	Give examples of sources of potential
____	____	6.	Discuss causes of electrical shock and effects on the human body

* S - Satisfactory
  U - Unsatisfactory

Evaluated by_____

Date_____

UNIT: Preconstruction Phase

OBJECTIVE: 7

TASK: Describe procedures accomplished before aerial construction can begin

PERFORMANCE OBJECTIVE: The student will be able to give step by step procedures for the preconstruction phase of aerial construction.

SETTING: Classroom

PERFORMANCE GUIDE:

1. State parties involved in a 3 party walk
2. Discuss purpose of a 3 party walk
3. Review procedure of a 3 party walk
   A) Understand utility map numbering system
   B) Explain measurement of utility attachments and give rules and rationale for distances between lines.
   C) Have knowledge of 3 party discussions/decisions
4. Explain work orders generated for both utilities, make ready work done by utilities and subsequent release for cable construction
5. State the expected clearances for roads and railroads.

RESOURCES:

Student's Name_____

UNIT: Preconstruction Phase

OBJECTIVE: 7

CHECKLIST: Describe procedures accomplished before aerial construction can begin

ACTIVITY:

*S	U		
____	____	1.	State parties involved in a 3 party walk
____	____	2.	Discuss purpose of a 3 party walk
____	____	3.	Review procedure of a 3 party walk
____	____	4.	Understand utility map numbering system
____	____	5.	Explain measurement of utility attachments and give rules and rationale for distances between lines
____	____	6.	Have knowledge of 3 party discussions/decisions
____	____	7.	Explain work orders generated for both utilities, make ready work done by utilities and subsequent release for cable construction
____	____	8.	State the expected clearances for roads and railroads.

* S - Satisfactory
  U - Unsatisfactory

Evaluated by_____

Date_____

UNIT: Mapping

OBJECTIVE 8

TASK: Ability to read, interpret, and draw maps

PERFORMANCE OBJECTIVE: Student will identify and utilize symbols in strand and design maps.

SETTING: Classroom

PERFORMANCE GUIDE:

1. Understand the reason for symbol use on maps
2. Understand the need for standardization of map symbols and agencies involved in the standardizing process (SCTE)
3. Have student produce a symbol for a technical name and vice versa for a list of symbols
4. Show knowledge of cable company redrawing maps provided by utility or actually locating each pole on a base/platt map
5. Demonstrate ability to read and interpret strand and design maps
6. Have students complete strand design from a map of pole locations, using symbols and stating rationale

RESOURCES:

1. Obtain maps from local utility and cable companies

2. Graphic Symbols For CATV
   National Cable Television Association

3. Graphic Symbols for CATV
   DT-2A Society of Cable Television Engineers

4. Template, CATV Symbols
   Society of Cable Television Engineers

5. Basic System Design
   T-1024 Society of Cable Television Engineers

Student's Name _____

UNIT: Mapping

OBJECTIVE: 8

CHECKLIST: Ability to read, interpret, and draw maps

ACTIVITY:

*S	U		
____	____	1.	Understand the reason for symbol use on maps
____	____	2.	Understand the need for standardization of map symbols and agencies involved in the standardizing process (SCTE)
____	____	3.	Have student produce a symbol for a technical name and vice versa for a list of symbols
____	____	4.	Show knowledge of cable company redrawing maps provided by utility or actually locating each pole on a base/platt map
____	____	5.	Demonstrate ability to read and interpret strand and design maps
____	____	6.	Have students complete strand design from a map of pole locations, using symbols and stating rationale

* S - Satisfactory
  U - Unsatisfactory

Evaluated by _____

Date _____

UNIT: Pole Framing

OBJECTIVE: 9

TASK: Identification of framing and associated hardware

PERFORMANCE OBJECTIVE: The student will be able to identify framing and associated hardware from map symbols and/or technical name.

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. Identify framing and associated hardware
2. Select proper hardware from a map symbol
3. Select proper hardware from a technical name
4. Identify hardware options where applicable, including metal poles

RESOURCES:

1. CATV Cable Construction Manual
2. Jackson Enterprises Construction Manual
3. Selecting Mechanical Equipment For CATV
   T-1019 Society of Cable Television Engineers

Student's Name _____

UNIT: Pole Framing

OBJECTIVE: 9

CHECKLIST: Identification of framing and associated hardware

ACTIVITY:

*S	U		
____	____	1.	Identify framing and associated hardware
____	____	2.	Select proper hardware from a map symbol
____	____	3.	Select proper hardware from a technical name
____	____	4.	Identify hardware options where applicable, including metal poles

* S - Satisfactory
  U - Unsatisfactory

Evaluated by _____

Date _____

UNIT: Pole Framing

OBJECTIVE: 10

TASK: Practical installation of framing

PERFORMANCE OBJECTIVE: The student will be able to select and install framing and hardware.

SETTING: Aerial practice field

PERFORMANCE GUIDE:

1. Select and install framing, from a symbol, at ground level and working height
2. Select and install framing, from a technical name, at ground level and working height

RESOURCES:

Student's Name _____

UNIT: Pole Framing

OBJECTIVE: 10

CHECKLIST: Practical installation of framing

ACTIVITY:

*S	U	
		Ground level
____	____	1. Select and install framing, from a symbol
____	____	2. Select and install framing, from a technical name
		Working height
____	____	3. Select and install framing, from a symbol
____	____	4. Select and install framing, from a technical name

UNIT: Climbing

OBJECTIVE: 11

TASK: Identify climbing equipment

PERFORMANCE OBJECTIVE: The students will identify, state the purpose of and correctly size six pieces of equipment.

SETTING: Classroom

PERFORMANCE GUIDE:

1. Identify the six pieces of equipment
2. Identify the reasons for wearing a hard hat at all times
3. Properly size the hard hat
4. State the reasons for wearing a body belt
5. Properly size the body belt
6. State the reasons for using a safety strap
7. Understand the factors that determine the size of the safety strap
8. Identify the reason for wearing climbers
9. Demonstrate proper wearing and adjustment of climbers
10. Identify the reasons for wearing work gloves
11. State the reasons for wearing long sleeves

RESOURCES:

1. From Hooks To Climbers (Slides)
   Bureau of Safety, Ltd.

2. Belt Safety (Slides)
   Bureau of Safety, Ltd.

Student's Name_____

UNIT: Climbing

OBJECTIVE: 11

CHECKLIST: Identify climbing equipment

ACTIVITY:

*S	U		
____	____	1.	Identify the six pieces of equipment
____	____	2.	Identify the reasons for wearing a hard hat at all times
____	____	3.	Properly size the hard hat
____	____	4.	State the reasons for wearing a body belt
____	____	5.	Properly size the body belt
____	____	6.	State the reasons for using a safety strap
____	____	7.	Understand the factors that determine the size of the safety strap
____	____	8.	Identify the reason for wearing climbers
____	____	9.	Demonstrate proper wearing and adjustment of climbers
____	____	10.	Identify the reasons for wearing work gloves
____	____	11.	State the reasons for wearing long sleeves

* S - Satisfactory
  U - Unsatisfactory

Evaluated by_____

Date_____

UNIT: Climbing

OBJECTIVE: 12

TASK: Understand how to use and care for equipment

PERFORMANCE OBJECTIVE: The student will demonstrate the proper use and care of the six pieces of equipment.

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. Properly care for hard hat
2. Show proper care for body belt
   A) Treatment of leather
   B) Inspection of leather parts
   C) Inspection of 'D' rings
   D) Nylon parts inspected for fray
3. Show proper care for leather safety straps
4. Inspect for wear layer in nylon safety strap
5. Demonstrate the proper position for wearing the safety strap when not in use
   A) Worn on lead or working side
   B) Snaps stored in proper position (one snap in, one snap out)
6. Demonstrate the inspection of stirrups, ankle straps, and calf straps for wear
7. Show how to test gaffs for shape and length using the gaff gauge
8. Have students sharpen improper gaffs to manufacturer's specification and retest
9. Demonstrate the proper care for gaffs when not climbing or being stored
10. Show proper care of work gloves
11. Show proper use of long sleeves

RESOURCES:

1. Confident Climbing: A Classroom Session
   T-1002 Society of Cable Television Engineers

Student's Name_____

UNIT: Climbing

OBJECTIVE: 12

CHECKLIST: Understand how to use and care for equipment

ACTIVITY:

*S	U		
____	____	1.	Properly care for hard hat
____	____	2.	Show proper treatment of leather body belts
____	____	3.	Show proper inspection of leather body belts
____	____	4.	Show proper inspection of 'D' rings
____	____	5.	Show proper inspection of nylon parts for fray
____	____	6.	Show proper care for leather safety straps
____	____	7.	Inspect for wear layer in nylon safety strap
____	____	8.	Demonstrate the wearing of the safety strap on lead or working side when not in use
____	____	9.	Demonstrate the wearing of the safety strap with snaps stored in proper position when not in use
____	____	10.	Demonstrate the inspection of stirrups, ankle straps, and calf straps for wear
____	____	11.	Show how to test gaffs for shape and length using the gaff gauge.
____	____	12.	Have students sharpen improper gaffs to manufacturer's specification and retest
____	____	13.	Demonstrate the proper care for gaffs when not climbing or being stored
____	____	14.	Show proper care of work gloves
____	____	15.	Show proper use of long sleeves

* S - Satisfactory
  U - Unsatisfactory

Evaluated by_____

Date_____

UNIT: Climbing

OBJECTIVE: 13

TASK: Preclimbing Skills

PERFORMANCE OBJECTIVE: The students will describe and demonstrate pre-climbing skills

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. Inspect equipment daily before beginning climbing
2. Inspect poles for overall condition
   A) Weather condition
   B) Moss
   C) The lean of the pole
3. Determine proper climbing path
4. Identify the tags that are used to indicate pole condition

RESOURCES:

Student's Name_____

UNIT: Climbing

OBJECTIVE: 13

CHECKLIST: Preclimbing Skills

ACTIVITY:

*S	U		
____	____	1.	Inspect equipment daily before beginning climbing
____	____	2.	Inspect poles for overall condition
____	____	3.	Determine proper climbing path
____	____	4.	Identify the tags that are used to indicate pole condition

* S - Satisfactory
  U - Unsatisfactory

Evaluated by_____

Date_____

UNIT: Climbing

OBJECTIVE: 14

TASK: Ascending

PERFORMANCE OBJECTIVE: The student will demonstrate proper pole climbing skills while ascending an utility pole.

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. Demonstrate the correct kick stroke at ground level and working height
   A) Approximately 15° downward
   B) Kick should be toward center of the pole
2. Show proper hand position at ground level and working height
3. Inspect pole while climbing at ground level and working height
4. Demonstrate correct hand-foot movements; right hand and right foot move together at ground level and working height
5. Demonstrate the proper transfer of weight at ground level and working height
6. Show proper removal of gaffs from the pole - a twisting - prying motion at ground level and working height
7. Students will use short choppy steps in climbing poles (approximately 6"-12") at ground level and working height

RESOURCES:

1. The Art of Climbing Safely
   Bureau of Safety, Ltd.

2. Confident Climbing: Field Demonstration
   T-1003 Society of Cable Television Engineers

Student's Name _____

UNIT: Climbing

OBJECTIVE: 14

CHECKLIST: Ascending

ACTIVITY:

*S	U		
		Ground level	
____	____	1.	Demonstrate the correct kick stroke
____	____	2.	Show proper hand position
____	____	3.	Inspect pole while climbing
____	____	4.	Demonstrate correct hand-foot movements; right hand and right foot move together
____	____	5.	Demonstrate the proper transfer of weight
____	____	6.	Show proper removal of gaffs from the pole- a twisting - prying motion
____	____	7.	Students will use short choppy steps in climbing poles (approximately 6"-12")
		Working height	
____	____	8.	Demonstrate the correct kick stroke
____	____	9.	Show proper hand position
____	____	10.	Inspect pole while climbing
____	____	11.	Demonstrate correct hand-foot movements; right hand and right foot move together
____	____	12.	Demonstrate the proper transfer of weight
____	____	13.	Show proper removal of gaffs from the pole- a twisting - prying motion
____	____	14.	Students will use short choppy steps in climbing poles (approximately 6"-12")

* S - Satisfactory
  U - Unsatisfactory

Evaluated by _____

Date _____

UNIT: Climbing

OBJECTIVE: 15

TASK: Strapping On

PERFORMANCE OBJECTIVE: The student will demonstrate proper strapping on procedures.

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. Demonstrate proper strapping on procedures at ground level and working height
   - A) Lead hand removes the moving end of strap from 'D' ring while opposite hand is supporting body
   - B) Lead hand passes snap around pole to opposite hand and assumes support of body
   - C) Opposite hand places moving snap in 'D' ring (snap out)
   - D) Visually inspect snap before leaning back
   - E) Check that strap is perpendicular to the pole and parallel to body belt

RESOURCES:

Student's Name _____

UNIT: Climbing

OBJECTIVE: 15

CHECKLIST: Strapping On

ACTIVITY:

*S	U	
		Ground level
____	____	1. Lead hand removes the moving end of strap from 'D' ring while opposite hand is supporting body
____	____	2. Lead hand passes snap around pole to opposite hand and assumes support of body
____	____	3. Opposite hand places moving snap in 'D' ring (snap out)
____	____	4. Visually inspect snap before leaning back
____	____	5. Check that strap is perpendicular to the pole and parallel to body belt
		Working height
____	____	6. Lead hand removes the moving end of strap from 'D' ring while opposite hand is supporting body
____	____	7. Lead hand passes snap around pole to opposite hand and assumes support of body
____	____	8. Opposite hand places moving snap in 'D' ring (snap out)
____	____	9. Visually inspect snap before leaning back
____	____	10. Check that strap is perpendicular to the pole and parallel to body belt

* S - Satisfactory
  U - Unsatisfactory

Evaluated by _____

Date _____

UNIT: Climbing

OBJECTIVE: 16

TASK: Working Position

PERFORMANCE OBJECTIVE: The student will demonstrate a correct working position.

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. Demonstrate transfer of weight to lead foot and proper placement of opposite foot for balance at ground level and working height
2. Show how to shift weight for extended working times at ground level and working height

RESOURCES:

Student's Name _____

UNIT: Climbing

OBJECTIVE: 16

CHECKLIST: Working Position

ACTIVITY:

*S	U	
		Ground level
____	____	1. Demonstrate transfer of weight to lead foot and proper placement of opposite foot for balance
____	____	2. Show how to shift weight for extended working times
		Working height
____	____	3. Demonstrate transfer of weight to lead foot and proper placement of opposite foot for balance
____	____	4. Show how to shift weight for extended working times

* S - Satisfactory
  U - Unsatisfactory

Evaluated by _____

Date _____

UNIT: Climbing

OBJECTIVE: 17

TASK: Maneuvering

PERFORMANCE OBJECTIVE: The student will maneuver using the safety strap

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. Demonstrate quarter turns to circle pole at ground level and at working height
   A) While leaning reposition lead foot
   B) Reposition opposite foot
   C) Adjust belt
2. Demonstrate procedure for making small vertical adjustments in working position at ground level and at working height
   A) Ascending - move strap then feet
   B) Descending - move feet then strap

RESOURCES:

Student's Name_____

UNIT: Climbing

OBJECTIVE: 17

CHECKLIST: Maneuvering

ACTIVITY:

*S	U	
		Ground level
____	____	1. Demonstrate quarter turns to circle pole
____	____	2. Demonstrate procedure for making small vertical adjustments in working position
		Working height
____	____	3. Demonstrate quarter turns to circle pole
____	____	4. Demonstrate procedure for making small vertical adjustments in working position

* S - Satisfactory
  U - Unsatisfactory

Evaluated by_____

Date_____

UNIT: Climbing

OBJECTIVE: 18

TASK: Strapping Off

PERFORMANCE OBJECTIVE: The student will show correct strapping off procedures.

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. Demonstrate proper strapping off procedures at ground level and working height
   - A) Opposite hand disengages snap from 'D' ring
   - B) Pass snap around to the back of the pole
   - C) Opposite hand passes snap to the lead hand and assumes support of body
   - D) Lead hand engages snap in 'D' ring in storage position

RESOURCES:

Aerial Construction - CATV

Student's Name _____

UNIT: Climbing

OBJECTIVE: 18

CHECKLIST: Strapping Off

ACTIVITY:

*S	U	
		Ground level
____	____	1. Opposite hand disengages snap from 'D' ring
____	____	2. Pass snap around to the back of the pole
____	____	3. Opposite hand passes snap to the lead hand and assumes support of body
____	____	4. Lead hand engages snap in 'D' ring in storage position
		Working height
____	____	5. Opposite hand disengages snap from 'D' ring
____	____	6. Pass snap around to the back of the pole
____	____	7. Opposite hand passes snap to the lead hand and assumes support of body
____	____	8. Lead hand engages snap in 'D' ring in storage position

* S - Satisfactory
  U - Unsatisfactory

Evaluated by _____

Date _____

UNIT: Climbing

OBJECTIVE: 19

TASK: Descending

PERFORMANCE OBJECTIVE: The student will demonstrate correct descending techniques

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. Demonstrate the correct kick stroke at ground level and working height
   A) 15^{o} toward the center of the pole
   B) Approximately 12-18" steps
   C) Lock knee and drop partial body weight
2. Demonstrate correct hand-foot movements; right hand and right foot move together at ground level and working height
3. Show proper position of opposite knee (not less than 90^{o}) before gaff of moving leg is engaged at ground level and working height
4. Demonstrate the proper transfer of weight at ground level and working height
5. Show proper removal of gaffs from pole - prying motion at ground level and working height
6. Demonstrate correct head position - downward, looking for obstructions at ground level and working height
7. Show correct length of last step off pole to ground- no more than 12" at ground level and working height

RESOURCES:

Student's Name_____

UNIT: Climbing

OBJECTIVE: 19

CHECKLIST: Descending

ACTIVITY:

*S	U		
		Ground level	
____	____	1.	Demonstrate the correct kick stroke
____	____	2.	Demonstrate correct hand-foot movements; right hand and right foot move together
____	____	3.	Show proper position of opposite knee (not less than 90°) before gaff of moving leg is engaged
____	____	4.	Demonstrate the proper transfer of weight
____	____	5.	Show proper removal of gaffs from pole-prying motion
____	____	6.	Demonstrate correct head position - downward, looking for obstructions
____	____	7.	Show correct length of last step off pole to ground - no more than 12"
		Working level	
____	____	8.	Demonstrate the correct kick stroke
____	____	9.	Demonstrate correct hand-foot movements; right hand and right foot move together
____	____	10.	Show proper position of opposite knee (not less than 90°) before gaff of moving leg is engaged
____	____	11.	Demonstrate the proper transfer of weight
____	____	12.	Show proper removal of gaffs from pole-prying motion
____	____	13.	Demonstrate correct head position - downward, looking for obstructions
____	____	14.	Show correct length of last step off pole to ground - no more than 12"

* S - Satisfactory
  U - Unsatisfactory

Evaluated by_____
Date_____

UNIT: Ladders

OBJECTIVE: 20

TASK: Knowledge of the kind of ladders and their use

PERFORMANCE OBJECTIVE: The student will demonstrate proper ladder usage and discuss ladder safety.

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. State when ladders should be used
   A) Restricted to when bottom of pole is obstructed
   B) Emergency
2. Discuss types of ladders
   A) Fiberglass
   B) Wood
   C) Never metal
3. Demonstrate how to inspect a ladder for safety
   A) Rungs
   B) Rails
   C) Moving parts
   D) Grip feet
4. Show proper angle placement of ladder (2-1 ratio; rise to run)
5. Have student test ladder footing; by standing on bottom rung before climbing

RESOURCES:

Student's Name _____

UNIT: Ladders

OBJECTIVE: 20

CHECKLIST: Knowledge of the kind of ladders and their use

ACTIVITY:

*S	U		
____	____	1.	State when ladders should be used
____	____	2.	Discuss types of ladders
____	____	3.	Demonstrate how to inspect a ladder for safety
____	____	4.	Show proper angle placement of ladder (2-1 ratio; rise to run)
____	____	5.	Have student test ladder footing; by standing on bottom rung before climbing

* S - Satisfactory
  U - Unsatisfactory

Evaluated by _____

Date _____

UNIT: Drilling

OBJECTIVE: 21

TASK: Discuss types of drills, bits and drilling techniques

PERFORMANCE OBJECTIVE: The students will identify different drills and bits and will demonstrate proper drilling technique.

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. Identify different types of drills and bits
2. State advantages and disadvantages of different types of drills and bits
3. Show how to properly install the bit in the brace
4. Demonstrate how to properly raise (on hand line) a bit and brace up a pole
5. Explain number of holes needed and placement of holes
6. Demonstrate correct drilling procedure at working height
   - A) Check for squareness
   - B) Check that hole goes through center of pole
   - C) Starting the bit
   - D) Completing the drilling

RESOURCES:

Student's Name _____

UNIT: Drilling

OBJECTIVE: 21

CHECKLIST: Discuss types of drills, bits and drilling techniques

ACTIVITY:

*S	U		
____	____	1.	Identify different types of drills and bits
____	____	2.	State advantages and disadvantages of different types of drills and bits
____	____	3.	Show how to properly install the bit in the brace
____	____	4.	Demonstrate how to properly raise (on hand line) a bit and brace up a pole
____	____	5.	Explain number of holes needed and placement of holes
____	____	6.	Demonstrate correct drilling procedure at working height

* S - Satisfactory
  U - Unsatisfactory

Evaluated by _____

Date _____

UNIT: Stranding

OBJECTIVE: 22

TASK: Understand the physical properties of strand

PERFORMANCE OBJECTIVE: The student will describe the physical properties of strand

SETTING: Classroom

PERFORMANCE GUIDE:

1. Describe strand
2. Explain tensile strength
3. Discuss the make-up of strand

RESOURCES:

Student's Name _____

UNIT: Stranding

OBJECTIVE: 22

CHECKLIST: Understand the physical properties of strand

ACTIVITY:

*S	U		
____	____	1.	Describe strand
____	____	2.	Explain tensile strength
____	____	3.	Discuss the make-up of strand

* S - Satisfactory
  U - Unsatisfactory

Evaluated by _____

Date _____

UNIT: Stranding

OBJECTIVE: 23

TASK: Discuss and demonstrate stranding techniques

PERFORMANCE OBJECTIVE: The student will discuss the movement of strand from a trailer and demonstrate proper stranding techniques

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. Discuss the proper loading techniques of a trailer
2. State the need for a friction brake and a swivel strand brake
3. Describe how friction brake and swivel strand brake work
4. Demonstrate proper stranding procedure
   - A) Drill hole
   - B) Frame straight clamp
   - C) Pass cable through the clamp
   - D) Tighten clamp just enough to hold strand, strand must be able to move
   - E) Pulling procedures including throwing weighted hand line
   - F) Attach loose end
   - G) Tension strand

RESOURCES:

1. Stringing Strand and Cable Part 1 & 2
   National Cable Television Assoc.

Student's Name_____

UNIT: Stranding

OBJECTIVE: 23

CHECKLIST: Discuss and demonstrate stranding techniques

ACTIVITY:

*S	U		
____	____	1.	Discuss the proper loading techniques of a trailer
____	____	2.	State the need for a friction brake and a swivel strand brake
____	____	3.	Describe how friction brake and swivel strand brake work
			Stranding Procedure
____	____	4.	Demonstrate proper stranding procedure
____	____	5.	Drill hole
____	____	6.	Frame straight clamp
____	____	7.	Pass cable through the clamp
____	____	8.	Tighten clamp just enough to hold strand, strand must be able to move
____	____	9.	Pulling procedures including throwing weighted hand line
____	____	10.	Attach loose end
____	____	11.	Tension strand

* S - Satisfactory
  U - Unsatisfactory

Evaluated by_____

Date_____

UNIT: Stranding

OBJECTIVE: 24

TASK: Anchoring

PERFORMANCE OBJECTIVE: The student will demonstrate knowledge of and correctly anchor strand

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. State the physical attributes of an anchor
2. Discuss the method of selecting an anchor
3. Demonstrate the installation of an anchor, including calling for locates
4. Describe the use of an auxiliary anchor eye
5. Explain the use of guy guards

RESOURCES:

Student's Name_____

UNIT: Stranding

OBJECTIVE: 24

CHECKLIST: Anchoring

ACTIVITY:

*S	U		
____	____	1.	State the physical attributes of an anchor
____	____	2.	Discuss the method of selecting an anchor
____	____	3.	Demonstrate the installation of an anchor, including calling for locates
____	____	4.	Describe the use of an auxiliary anchor eye
____	____	5.	Explain the use of guy guards

* S - Satisfactory
  U - Unsatisfactory

Evaluated by_____

Date_____

UNIT: Cabling

OBJECTIVE: 25

TASK: Familiarize with strand/cable method

PERFORMANCE OBJECTIVE: The student will discuss and demonstrate the strand/cable method

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. Show correct trailer loading techniques
2. Attach chute to strand
3. Demonstrate the placement of rollers or multi-cable blocks, 45° and 90° corner blocks, and proper cable handling
4. Describe the need for a cable grip and puller
5. Properly attach a cable grip and puller for the pulling procedure
6. Describe the need and properly install spacers and lashing wire clamp
7. State need for expansion loops
8. Identify placement of expansion loops
9. Describe method for making expansion loops
   A) Forming board
   B) Uni-bender
10. Properly install expansion loops using existing equipment
11. Demonstrate the proper use of lashing wire machines
12. Explain maintenance and adjustments on a lashing wire machine
13. Reading off an electronics design map, show where the routing of the cable will go
14. Discuss and demonstrate proper grounding techniques

RESOURCES:

1. Construction Techniques for Extended System Life
   T-1015 Society of Cable Television Engineers

2. Broadband Coaxial Cable Basics
   T-1018 Society of Cable Television Engineers

3. Broadband Coaxial Cable Handling & Installation
   T-1020 Society of Cable Television Engineers

Student's Name_____

UNIT: Cabling

OBJECTIVE: 25

CHECKLIST: Familiarize with strand/cable method

ACTIVITY:

*S	U		
____	____	1.	Show correct trailer loading techniques
____	____	2.	Attach chute to strand
____	____	3.	Demonstrate the placement of rollers or multi-cable blocks, 45° and 90° corner blocks, and proper cable handling
____	____	4.	Describe the need for a cable grip and puller
____	____	5.	Properly attach a cable grip and puller for the pulling procedure
____	____	6.	Describe the need and properly install spacers and lashing wire clamp
____	____	7.	State need for expansion loops
____	____	8.	Identify placement of expansion loops
____	____	9.	Describe method for making expansion loops by forming board
____	____	10.	Describe method for making expansion loops by uni-bender
____	____	11.	Properly install expansion loops using existing equipment
____	____	12.	Demonstrate the proper use of lashing wire machines
____	____	13.	Explain maintenance and adjustments on a lashing wire machine
____	____	14.	Reading off an electronics design map, show where the routing of the cable will go
____	____	15.	Discuss and demonstrate proper grounding techniques

* S - Satisfactory
U - Unsatisfactory

Evaluated by_____

Date_____

UNIT: Splicing

OBJECTIVE: 26

TASK: Understand splicing procedures

PERFORMANCE OBJECTIVE: The student will explain how to splice cable as designated on an electronics design map.

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. Identify proper use of tools used for splicing
2. State which device is indicated by a symbol on an electronics design map
3. Interpret electronics design map for placement of active (i.e. amplifier) and passive (i.e. taps) devices
4. Review tightening sequence for the fitting, in order to avoid damage to cable
5. Outline proper use of propane torch to heat and shrink tubing as weatherproofing

RESOURCES:

1. Cable Preparation & Connector Installation
   T-1028 Society of Cable Television Engineers

Student's Name_____

UNIT: Splicing

OBJECTIVE: 26

CHECKLIST: Understand splicing procedures

ACTIVITY:

*S	U		
____	____	1.	Identify proper use of tools used for splicing
____	____	2.	State which device is indicated by a symbol on an electronics design map
____	____	3.	Interpret electronics design map for placement of active (i.e. amplifier) and passive (i.e. taps) devices
____	____	4.	Review tightening sequence for the fitting, in order to avoid damage to cable
____	____	5.	Outline proper use of propane torch to heat and shrink tubing as weatherproofing

* S - Satisfactory
  U - Unsatisfactory

Evaluated by_____

Date_____

UNIT: Survival Skills

OBJECTIVE: 27

TASK: Learn survival skills needed for employment

PERFORMANCE OBJECTIVE: Student will review job survival skills and discuss how they apply to the job of aerial construction crew member.

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. Give examples of where to look for an aerial construction crew member position
2. Demonstrate ability to fill out job application
3. Discuss correct interviewing techniques (eye contact, attire, etc.)
4. Demonstrate appropriate worker relationships
5. Understand what the aerial construction crew's pay is based on
6. Review and understand do's and don'ts of the job (i.e. punctuality)
7. Demonstrate good public relation skills
8. Discuss driving skills related to aerial construction

RESOURCES:

1. Careers in Cable
   National Cable Television Association

Student's Name _____

UNIT: Survival Skills

OBJECTIVE: 27

CHECKLIST: Learn survival skills needed for employment

ACTIVITY:

*S	U		
____	____	1.	Give examples of where to look for an aerial construction crew member position
____	____	2.	Demonstrate ability to fill out job application
____	____	3.	Discuss correct interviewing techniques (eye contact, attire, etc.)
____	____	4.	Demonstrate appropriate worker relationships
____	____	5.	Understand what the aerial construction crew's pay is based on
____	____	6.	Review and understand do's and don'ts of the job (i.e. punctuality)
____	____	7.	Demonstrate good public relation skills
____	____	8.	Discuss driving skills related to aerial construction

* S - Satisfactory
  U - Unsatisfactory

Evaluated by _____

Date _____

UNIT: Inventory

OBJECTIVE: 28

TASK: Inventory supplies used in aerial construction practices

PERFORMANCE OBJECTIVE: The student will remove and complete an inventory on supplies used

SETTING: Classroom and aerial practice field

PERFORMANCE GUIDE:

1. Properly remove all material (hardware, framing, cable, strand) from poles
2. Sort material as to pieces that can be reused and pieces to discard
3. Inventory material to be used in the future

RESOURCES:

Student's Name_____

UNIT: Inventory

OBJECTIVE: 28

CHECKLIST: Inventory supplies used in aerial construction practices

ACTIVITY:

*S	U		
____	____	1.	Properly remove all material (hardware, framing, cable, strand) from poles
____	____	2.	Sort material as to pieces that can be reused and pieces to discard
____	____	3.	Inventory material to be used in the future

* S - Satisfactory
  U - Unsatisfactory

Evaluated by_____

Date_____

Appendix A

Primary Vocabulary List

Access
Access Channels
Aerial Plant
Amplifier
Antenna
Attenuation
Attenuator
Bandwidth
Belt Suspenders
Boots
Branch
Broadcasting
Cable T.V.
Cascade
Channel
Coaxial Cable
Community Antenna Television System (CATV)
Converter
Directional Coupler
Distant Signals
Distribution Plant
Downstream
Drop Cable
Dual Cable
Earth Stations
Feeder Line
Franchise
Frequency
Gafts
Gloves
Guy Wire
Hard Hat
Hardware
Headend
House Drop
Interference
Line Extender Amplifier
Lineman's Belt
Major Market (or Top 100 Market)
Microwave
Off-the-air
Ordinance
Pole Attachment
Power Coupler
Radio Frequency
Rope
Safety Strap
Satellite
Signal Lever
Splitter

Appendix A (con't.)

Strand
Subscriber
Subscriber Drop
Tap
Trunk Amplifier
Trunk Cable
Trunk Lines
Trunk Splitter
Underground Plant
Upstream
UHF
VHF
Video

Appendix B

Secondary Vocabulary List

Adjacent Channel
Audio
Cablecasting
Carrier
Certificate of Compliance (CAC)
Channel Capacity
Common Carrier
Community Antenna Relay Service (CARS)
Compulsory License
dB
dBmV
DBmv
Direct Pickup
Education Channel
Fiber Optics
Grade A Contour
Grade B Contour
Grandfathering
High VHF Band
Interactive
Local Government Channel
Local Origination Channel
Low VHF Band
Mid Band
Modulator
Performance Standards
Program Nonduplication
Public Access Channel
Signal to Echo Ratio
Sports Blackout
Sub Band
Switcher
Two-Way Capacity
VTR

AERIAL CONSTRUCTION CURRICULUM CHECKLIST

Student Name: _____ **Instructor:** _____

Entrance Date: _____ **Exit Date:** _____

Objective number/ Activity number	Satisfactory	Unsatisfactory	ACTIVITY DESCRIPTION
			INTRODUCTION
1/1			Explain start of cable
1/2			Demonstrate understanding for desirability of imported signals
1/3			Explain why FCC became involved
1/4			Identify what can/can't be done by cable (FCC rules)
1/5			Describe process of getting satellite signals
1/6			State how cable uses local origination programming
1/7			Show knowledge of future uses of cable
2/1			Define terms on primary list
2/2			Use primary words during expressive communication
2/3			Recognize secondary words as terms related to industry
3/1			Demonstrate knowledge of bidding process
3/2			Outline procedure following franchise
3/3			Describe difference between aerial & underground construction
3/4			Show understanding of when activation & installation take place
			SAFETY
4/1			State general safety rules
4/2			Explain what to do in case of emergency
4/3			Give examples of personal equipment safety rules
4/4			Give examples of gaff rules
4/5			Give examples of construction equipment safety rules
4/6			Give examples of climbing rules
5/1			Understand/prioritize four emergency cases
			(BREATHING)
5/2			Check for breathing
5/3			Tilt head to open airway
5/4			Explain artificial respiration
5/5			State medical assistance would be sought
			(BLEEDING)
5/6			Apply direct pressure to wound
5/7			Elevate wound area
5/8			Apply pressure to pressure point
5/9			State medical assistance would be sought

Objective number/ Activity number	Satisfactory	Unsatisfactory	ACTIVITY DESCRIPTION
			(POISON)
5/10			Explain types of poisons & corresponding methods of diluting
5/11			State medical assistance would be sought
			(SHOCK)
5/12			Maintain body temperature
5/13			State victim would receive small amounts of fluid if conscious
5/14			State medical assistance would be sought
			ELECTRICAL
6/1			Show knowledge of forms of energy
6/2			Describe atomic structure (electrons, protons, neutrons)
6/3			Demonstrate understanding of electrical potential, current, resistance
6/4			Identify/describe open & closed circuits
6/5			Give examples of sources of potential
6/6			Discuss causes/effects of electrical shock
			PRECONSTRUCTION PHASE
7/1			State parties involved in 3 party walk
7/2			Discuss purpose of 3 party walk
7/3			Review procedure of 3 party walk
7/4			Understand utility map numbering system
7/5			Explain measurement, rules, rationale for distances between utility attachments
7/6			Have knowledge of 3 party discussions/decisions
7/7			Explain work orders, make ready work & release for cable construction

Objective number/ Activity number	Satisfactory	Unsatisfactory	ACTIVITY DESCRIPTION
			(GROUND LEVEL)
17/1			Demonstrate quarter turns
17/2			Demonstrate small vertical adjustments in working position
			(WORKING HEIGHT)
17/3			Demonstrate quarter turns
17/4			Demonstrate small vertical adjustments in working position
			(GROUND LEVEL)
18/1			Opposite hand disengages snap from D ring
18/2			Pass snap around to back of pole
18/3			Opposite hand passes snap to lead hand and opposite hand assumes support
18/4			Lead hand engages snap in D ring
			(WORKING HEIGHT)
18/5			Opposite hand disengages snap from D ring
18/6			Pass snap around to back of pole
18/7			Opposite hand passes snap to lead hand and opposite hand assumes support
18/8			Lead hand engages snap in D ring
			(GROUND LEVEL)
19/1			Demonstrate kick stroke
19/2			Demonstrate hand-foot movements
19/3			Show position of opposite knee before gaff of moving leg is engaged
19/4			Demonstrate transfer of weight
19/5			Show removal of gaffs from pole
19/6			Demonstrate head position
19/7			Show length of last step to ground
			(WORKING HEIGHT)
19/8			Demonstrate kick stroke
19/9			Demonstrate hand-foot movements
19/10			Show positions of opposite knee before gaff of moving leg is engaged
19/11			Demonstrate transfer of weight
19/12			Show removal of gaffs from pole
19/13			Demonstrate correct head position
19/14			Show length of last step to ground
			(LADDERS)
20/1			State when ladders should be used
20/2			Discuss types of ladders
20/3			Demonstrate how to inspect a ladder
20/4			Show angle placement of ladder
20/5			Test ladder footing before climbing
			(DRILLING)
21/1			Identify different types of drills and bits
21/2			State advantages/disadvantages of different types of drills and bits
21/3			Show how to install bit in brace
21/4			Demonstrate how to raise a bit and brace up pole
21/5			Explain number/placement of holes needed
21/6			Demonstrate drilling procedure at working height
			(STRANDING)
22/1			Describe strand
22/2			Explain tensile strength
22/3			Discuss the make-up of strand
23/1			Discuss loading techniques of trailer
23/2			State need for friction brake and swivel strand brake work
			(STRANDING PROCEDURE)
23/6			Frame straight clamp
23/7			Pass cable through clamp
23/8			Tighten clamp just enough to hold strand
23/9			Pulling procedures including throwing weighted hand line
23/10			Attach loose end
23/11			Tension strand
24/1			State attributes of an anchor
24/2			Discuss method of selecting an anchor
24/3			Demonstrate installation of an anchor
24/4			Describe use of auxiliary anchor eye
24/5			Explain use of guy guards
			(CABLING)
25/1			Show trailer loading techniques
25/2			Attach chute to strand
25/3			Demonstrate placement of rollers on multi-cable blocks
25/4			Describe need for cable grip and puller
25/5			Attach cable grip and puller
25/6			Install spacers and lashing wire clamp
25/7			State need for expansion loops
25/8			Identify placement of expansion loops
25/9			Describe method for making expansion loops by forming board
25/10			Describe method for making expansion loops by uni-bender
25/11			Install expansion loops using existing equipment
25/12			Demonstrate the use of lashing wire machines
25/13			Explain maintenance/adjustments on lashing wire machine
25/14			Reading electronics design map, show routing of cable
25/15			Discuss/demonstrate grounding techniques
			(SPLICING)
26/1			Identify use of splicing tools
26/2			State device indicated by symbol on electronics design map
26/3			Interpret electronics design map for placement of active and passive devices
26/4			Review tightening sequence for cable fittings

Objective number/ Activity number	Satisfactory	Unsatisfactory	ACTIVITY DESCRIPTION
7/8			State expected clearance for roads & railroads
			MAPPING
8/1			Understand reason for symbols
8/2			Understand need for standardization of symbols & agencies involved
8/3			Produce a symbol for a technical name & vice versa
8/4			Show knowledge of cable redrawing from utility map
8/5			Demonstrate ability to read/interpret strand & design maps
8/6			Complete strand design from map of pole locations, using symbols, state rationale
			POLE FRAMING
9/1			Identify framing & associated hardware
9/2			Select hardware from map symbol
9/3			Select hardware from technical name
9/4			Identify hardware options
			(GROUND LEVEL)
10/1			Select/install framing, from symbol
10/2			Select/install framing, from technical name
			(WORKING HEIGHT)
10/3			Select/install framing, from symbol
10/4			Select/install framing, from technical name
			CLIMBING
11/1			Identify six pieces of equipment
11/2			Identify reasons for wearing hard hat
11/3			Size hard hat
11/4			State reasons for wearing body belt
11/5			Size body belt
11/6			State reasons for using safety strap
11/7			Understand factors that determine size of safety strap
11/8			Identify reason for wearing climbers
11/9			Demonstrate wearing/adjustment of climbers
11/10			Identify reasons for wearing gloves
11/11			State reasons for wearing long sleeves
12/1			Care for hard hat
12/2			Show treatment of leather body belts
12/3			Show inspection of leather body belts
12/4			Show inspection of 'D' rings
12/5			Show inspection of nylon parts for fray
12/6			Show care for leather safety straps
12/7			Inspect for wear layer in nylon safety strap
12/8			Demonstrate the storage of safety strap when not in use
12/9			Demonstrate position of snaps when not in use
12/10			Demonstrate inspection of stirrups, ankle straps, gaff straps
12/11			Test gaffs for shape & length using gaff gauge
12/12			Sharpen gaffs to manufacturer's specification & retest
12/13			Demonstrate care for gaffs when not climbing
12/14			Show care of work gloves
12/15			Explain need for long sleeves
13/1			Inspect equipment daily before climbing
13/2			Inspect poles for overall condition
13/3			Determine climbing path
13/4			Identify tags used to indicate pole condition
			(GROUND LEVEL)
14/1			Demonstrate kick stroke
14/2			Show hand position
14/3			Inspect pole while climbing
14/4			Demonstrate hand-foot movements
14/5			Demonstrate transfer of weight
14/6			Show removal of gaffs from the pole
14/7			Use short choppy steps in climbing
			(WORKING HEIGHT)
14/8			Demonstrate kick stroke
14/9			Show hand position
14/10			Inspect pole while climbing
14/11			Demonstrate hand-foot movements
14/12			Demonstrate transfer of weight
14/13			Show removal of gaffs from the pole
14/14			Use short choppy steps in climbing
			(GROUND LEVEL)
15/1			Lead hand removes moving end of strap from D ring, opposite hand supports body
15/2			Lead hand passes snap around pole to opposite hand and lead hand supports body
15/3			Opposite hand places moving snap in D ring
15/4			Visually inspect snap before leaning back
15/5			Check that strap is perpendicular to pole, parallel to body belt
			(WORKING HEIGHT)
15/6			Lead hand removes moving end of strap from D ring, opposite hand supports body
15/7			Lead hand passes snap around pole to opposite hand and lead hand supports body
15/8			Opposite hand places moving snap in D ring
15/9			Visually inspect snap before leaning back
15/10			Check that strap is perpendicular to pole, parallel to body belt
			(GROUND LEVEL)
16/1			Transfer weight to lead foot, placement of opposite foot for balance
16/2			Show how to shift weight

Objective number/ Activity number	Satisfactory	Unsatisfactory	ACTIVITY DESCRIPTION	Objective number/ Activity number	Satisfactory	Unsatisfactory	ACTIVITY DESCRIPTION
26/5			Outline use of propane torch to heat and shrink tubing as weatherproofing	27/5			Understand basis of crew's pay
				27/6			Demonstrate good public relation skills
			(SURVIVAL SKILLS)	27/7			Discuss related driving skills
27/1			Give examples of where to look for crew member positions				(INVENTORY)
27/2			Demonstrate ability to fill out job application	28/1			Remove all material from poles
27/3			Discuss interviewing techniques	28/2			Sort material (reused or discard)
27/4			Demonstrate appropriate worker relationships	28/3			Inventory material

SOURCES OF MATERIALS

1. Bureau of Safety, LTD.
   P.O.Box 371
   Park Forest, IL 60466

2. Comm/Scope
   A M/A-com Company
   Route 1, Box 199A
   Catawba, NC 28609

3. Jackson Enterprises
   P.O.Box 6
   Clayton, OH 45315

4. National Cable Television Association
   1724 Massachusetts Ave. N.W.
   Washington, D.C. 20036

5. Society of Cable Television Engineers
   P.O.Box 2389
   West Chester, PA 19380